

REMARKS

Foreign Priority:

Applicant thanks the Examiner for acknowledging Applicant's claim to foreign priority under 35 U.S.C. § 119(a)-(d), and that the certified copy of the priority document has been received.

Information Disclosure Statement:

Applicant also thanks the Examiner for initialing and returning the Form PTO/SB/08 A & B filed with the present application, thus indicating that the reference listed thereon has been considered.

Restriction/Election:

Applicant thanks the Examiner for acknowledging that claim 15 has been withdrawn from consideration. Applicant confirms the election of claims 1-14.

Claim Objections:

The Examiner has objected to claims 4 and 14 for an informality regarding the language of the Markush group. Applicant has amended these claims as shown. As such, Applicant hereby requests the Examiner reconsider and withdraw the above objection.

Claim Rejections:

Claims 1-14 are all of the claims that have been examined in the present application, and currently claims 1-2, 4-5, 7-8 and 10-14 stand rejected. Claims 3, 6 and 9 have been canceled.

35 U.S.C. § 112, 2nd Paragraph Rejection – Claims 1-14:

Claims 1-2, 4-5, 7-8 and 10-14 stand rejected under 35 U.S.C. § 112, 2nd paragraph as being indefinite. Specifically, the Examiner has indicated that some of the language in claim 1, renders the claim indefinite. Applicant has amended this claim as shown in the previous section to address the Examiner's concerns, and to clarify the claimed invention. Applicant submits that claim is now clear and definite. Accordingly, Applicant hereby requests the Examiner reconsider and withdraw the above rejection of the claims.

Claims 3, 6 and 9 have been canceled without prejudice or disclaimer.

35 U.S.C. § 102(e) Rejection – Claims 1-4, 6-7, 9, 11 and 14:

Claims 1-4, 6-7, 9, 11 and 14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,489,062 to Watanabe et al. In view of the following discussion, Applicant respectfully disagrees.

As an initial matter, Applicant notes that claims 3, 6 and 9 have been canceled without prejudice or disclaimer, and that the limitation of claim 9 has been incorporated into claim 1. As such, the present invention consists of the combination of a lithium titanate as active material and a non-fluorinated binder in the negative electrode of a lithium cell. *See* claim 1.

However, Watanabe describes and discloses a lithium cell comprising a negative electrode containing a spinel-type lithium titanate as active material (*see* col. 2, lines 54-56 and 58-59) and an organic binder (*see* col. 3, lines 5-6). It is noted that the organic binder is not particularly limited (*see* col. 7, line 57 to col. 8, line 10). Further, Watanabe cites a plurality of active materials on one hand and on the other hand a plurality of binders. Some of the binders

cited by Watanabe are fluorinated. According to examples 7 to 12 (*see* col. 12, lines 54-61), the cell may comprise LiCoO_2 as cathodic active material, $\text{Li}_4\text{Ti}_5\text{O}_{12}$ as anodic active material, the anodic binder being polyacrylic acid (*see* col. 9, lines 42-45).

However, there is no disclosure, in Watanabe, of having a rechargeable lithium storage cell having, *inter alia*, a non-fluorinated polymeric binder including a mixture of an elastomer and a cellulose compound, as set forth in claim 1, combined with the other features of claim 1 (i.e. having lithium titanate as active material and the non-fluorinated binder as claimed). Instead, Watanabe prefers as binder at least one of polysaccharides, thermoplastic resins, thermosetting resins, polymers having rubber elasticity, etc..., or their mixture. Among these compounds Watanabe cites at the same level carboxymethyl cellulose, hydroxypropyl cellulose, styrene-butadiene rubber, and tetrafluoroethylene, polyvinylidene fluoride, fluorocarbon resin, fluororubber. Applicant submits that Watanabe fails to disclose each and every element of the present invention, because there is no disclosure, teaching or suggestion of selecting and combining one of the active materials with a non-fluorinated binder including a mixture of two compounds selected in the list of the numerous binder given by Watanabe. Namely, there is no express disclosure, within Watanabe, of having a rechargeable lithium storage cell having, *inter alia*, the combination of a lithium titanate as active material and a non-fluorinated polymeric binder in the negative electrode of a lithium cell where the non-fluorinated polymeric binder includes a mixture of an elastomer and a cellulose compound. *See* claim 1. Further, there is no discussion or teaching as to how to select and combine the various compounds and components discussed by Watanabe, thus there is no disclosure or suggestion of the present invention.

For at least this reason, Watanabe fails to disclose each and every feature of claim 1, and thus fails to anticipate claim 1. Therefore, Applicant submits that claim 1, and all of the dependent claims therefrom, are allowable over the Watanabe reference.

However, additionally and independently, with regard to claim 2, Applicant further notes that Watanabe does not indicate how to choose a binder capable of forming a stable emulsion in suspension in water. With regard to claim 4, Watanabe does cite as example of a binder styrene-butadiene rubber, but Watanabe does not suggest using it by mixing with a cellulose compound. Thus, as claim 4 depends on claim 1, Watanabe fails to disclose each and every feature of claim 1. Further, with regard to both claims 11 and 14, there is no disclosure, whatever, of these claims, as they now depend on the newly amended claim 1.

Therefore, in view of the foregoing, Applicant submits that Watanabe fails to disclose each and every feature of claim 1. As such, Watanabe fails to anticipate the present invention as required under the provisions of 35 U.S.C. § 102(e). Accordingly, Applicant hereby requests the Examiner reconsider and withdraw the above rejection of claim 1. Further, as claims 2, 4, 7, 11 and 14 depend on claim 1, Applicant submits that these claims are also allowable, at least by reason of their dependence.

35 U.S.C. § 103(a) Rejection – Claims 5, 8, 12 and 13:

Claims 5, 8, 12, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe. However, because claims 5, 8, 12 and 13 depend on claim 1, and because Watanabe fails to disclose, teach or suggest each and every feature of claim 1, Applicant submits that these claims are also allowable, at least by reason of their dependence.

35 U.S.C. § 103(a) Rejection – Claim 10:

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe in view of U.S. Patent No. 6,159,637 to Shizuka et al. Because claim 10 depends on claim 1, and Watanabe fails to cure the deficient teachings of Shizuka, Applicant submits that this claim is also allowable, at least by reason of its dependence.

However, additionally and independently, Applicant notes that Watanabe cites as an example of the binder a styrene butadiene rubber, but does not indicate or teach an acrylonitrile/butadiene copolymer. Thus, Watanabe does not suggest using it by mixing it with a cellulose compound. *See* claim 10. In addition, it would not have been obvious to combine Watanabe with other references as take in more examples of binders because Watanabe is not restrictive in the choice of a binder.

35 U.S.C. § 103(a) Rejection – Claims 1-14:

Claims 1-2, 4-5, 7-8 and 10-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,399,255 to Herreyre et al. in view of the Watanabe reference. In view of the following comments, Applicant respectfully traverses the above rejection.

With regard to the above cited references, Applicant submits that it would not have been obvious to one of ordinary skill in the art to combine the teachings of Herreyre with Watanabe. Namely, for one of ordinary skill in the art, it is not obvious to change an active material without studying the association with a specific binder. This is because the binder and the active material may react with each other during the electrochemical functioning, or a binder, which is adapted

to one active material, may have mechanical properties (such as adhesion) which renders it inadaptable to another active material. Because of this, Applicant submits that it would not have been obvious to combine the references as suggested by the Examiner.

Therefore, Applicant submits that one of ordinary skill in the art would have not combined the above references as suggested by the Examiner. As such, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 1, as required under 35 U.S.C. § 103(a). Accordingly, Applicant hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 103(a) rejection of this claim. Further, as claims 2, 4-5, 7-8 and 10-14 depend on claim 1, Applicant submits that these claims are also allowable, at least by reason of their dependence.

Conclusion:

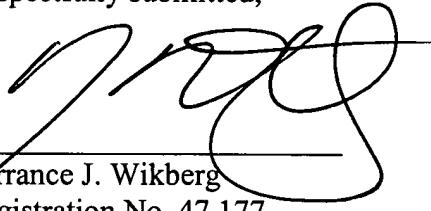
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/028,918

Our Ref.: Q67910
Art Unit: 1745

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Terrance J. Wikberg
Registration No. 47,177

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: January 12, 2004